



ADDRESS,

TO THE

ESSEX AGRICULTURAL SOCIETY,

AT THEIR

FIRST CATTLE SHOW,

AT

TOPSFIELD,

OCT. 5, 1820.

.....
BY ANDREW NICHOLS, ESQ.
.....

"-----Venerate the plough,
"And o'er your hills, and long withdrawing vales,
"Let Autumn spread his treasures to the sun,
"Luxuriant and unbounded." THOMSON.

SALEM:

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ADDRESS.

AGRICULTURE, the most ancient, the most necessary of Arts, has engaged the attention of the strongest and most enlightened minds, and employed the pen of the ablest of writers; and still the subject has never been, can never be, exhausted. The interests of Agriculturalists are inseparable from the permanent prosperity of every nation, and closely connected with the welfare of every individual of the human race. On Agriculture all are directly or indirectly dependent for the means of subsistence, and towards its improvement all should be willing to contribute. This consideration alone has induced me to appear before you. Yet it is with no small degree of diffidence, that I presume to address this numerous and highly respectable audience, composed as it is of many, whose scientific and literary acquirements are far superior to my own, and of a more numerous collection of *real farmers*, who I well know place but little confidence in the essays of professional men, on a subject with which they may be supposed to have little, if any, practical acquaintance. I was however bred a farmer, and have been personally acquainted with the toils, pleasures, hopes and disappointments, of an agricultural life. I feel a strong attachment to the occupation of my ancestors, who from the first settlement of this country have tilled with their own hands the soil of Essex. A regular course of medical studies embraces much that tends to explain the principles of fertility in soils, the phenomena of vegetation, the philosophy of Agriculture. Influenced by these considerations, and confiding in your candour to excuse unintentional errors, I shall without further apology offer such remarks as seem to me worthy your attention on this occasion.

Industry is a most ennobling trait in the character of any class of men. In the pursuit of agriculture it is absolutely necessary

to success. But industry is not the only virtue, that the cultivation of the earth promotes. Piety, sobriety of conduct, simplicity of manners, hospitality, friendship, and conjugal love, are more frequently found in all their purity among practical farmers than among other orders of men. For this there are natural causes. The husbandman's employment in the open field, where all is sublime, beautiful and harmonious around him, exercises both the body and mind in a manner most conducive to health and happiness. While sowing his grain, and nurturing his tender plants, he must be stupid indeed not to feel his dependence on the beneficent Parent of Nature, for the warming sun and refreshing showers, without which not a blade of grass can be made to vegetate, or an ear of corn be brought to maturity. "He is independent of popular favour, and exempt from those corroding cares, those mortifications, disappointments, jealousies and responsibilities, which plant thorns in the pillow of the professional man. The sources of ill will and secret envy among other professions, where one man's loss is another's gain, have no existence among men employed in Agriculture." Free from the anxiety attendant on the risks inseparable from mercantile engagements, he unites his fortunes with her's on whom were placed his earliest, his tenderest affections; and sees, without regret, an increasing family, looking to him for bread, instruction, and protection.

An Agricultural life is the natural condition of man. He was placed in the garden of Eden *to dress and to keep it*. When driven from paradise, he was commanded *to till the ground from which he was taken*. And wherever the great body of the people have yielded a willing obedience to this command, and not sought to supply their wants by other inventions, the earth has ever yielded them the necessities of life in abundance. It is astonishing to reflect on the immense population which a small territory well cultivated will sustain. "Egypt once contained forty millions of inhabitants, and was then able to supply surrounding nations with corn. A few years since, when the same territory contained only three millions, a French army of twenty-five thousand men found it difficult there to subsist. Sicily, when it contained in the small territory of Syracuse alone four

times the amount of the present population of the whole island, was deemed an inexhaustible store-house of corn for others." These examples show, that the earth is productive in proportion to the labour judiciously bestowed upon it. They are cited from times when that more productive vegetable, the potato, which now furnishes almost the whole food of thousands of families in Great-Britain, was unknown. Is it therefore too much to suppose, that when properly managed "every rood of ground *will maintain its man*"?

If the soil can be rendered so productive, it must be obvious, that the agriculture of this county is susceptible of great improvement.

What are the causes that have hitherto retarded this improvement? Among these, are, I conceive, the prejudices that exist among different classes of men engaged in agriculture. Speculative and practical farmers have ever been at variance. By speculative farmers, I mean those who have engaged in husbandry, either for amusement or from patriotic motives, without depending on it for the means of subsistence. The former are generally too fond of pursuing visionary schemes, and the latter frequently too much wedded to old practices to adopt the most obvious improvements. The speculative is apt to consider the mere practical farmer as a narrow-minded, obstinate, perverse man, who is determined to plod on in the path his forefathers had trodden; and the practical farmer in his turn laughs at the other as a visionary, who, mistaking dreams for realities, pursues plans that lead to disappointment and ruin.

These prejudices are generally carried too far, and are much to be regretted, although there is frequently some foundation for them on both sides. They too often prevent that social and free intercourse which would prove highly advantageous to both. The practical farmer, who has had but little opportunity to become acquainted with knowledge derived from books, or with practices, that have been found most successful in other places, would derive many useful hints from the speculative farmer, who might often be saved much useless expense by the experience and observation of the other. In this society both these classes of agriculturalists are uniting their efforts. May we not

confidently hope that the result will be the extinction of these prejudices, and the rapid diffusion of useful knowledge, among all classes of agriculturalists?

Another cause, which has hitherto retarded improvements in agriculture, is the low estimation in which the employment has been held. "In the most flourishing and happy era of the Roman Republic, the cultivators of the soil were esteemed a superior class to merchants and manufacturers." This was probably one cause of the great success in agriculture, which at that time enabled "the small vale of Campania alone (not one twentieth of the whole) to furnish subsistence for more people than the whole inhabitants of Italy now amount to." It is not however good policy for any nation to make invidious distinctions among the several classes of her citizens. The honest and industrious professional man, artist, mechanic, merchant, or manufacturer, deserves well of his country.

"Honour and shame from no condition rise,

"Act well your part, there all the honour lies."

But if it be a fact that husbandry has been, in this country, by many, considered a mean or servile employment, it becomes the duty of every good citizen to endeavour to raise its reputation to the rank it ought to hold, a rank inferior to none in society. Nothing would have a more direct tendency to improve agriculture, and raise its reputation, than a more general attention among farmers to those sciences, that explain many of its principles and operations. "Knowledge is power." The man, who understands philosophically the operations in which he is employed, will perform them with much greater ease, than one who has only a mechanical acquaintance with them. It is granted that practice alone is much better than theory without practice, but it is the union of both in the same individual that constitutes the most accomplished and successful operator.

The opinion has been too prevalent among farmers, that the only learning beneficial to those, who are to get their living by cultivating the soil, is to be able to read well, write well, and answer with facility questions in the most useful rules in arithmetic. It is acknowledged, that with these acquisitions only

there are many who have distinguished themselves both as agriculturalists and citizens. But it does not follow that the same men would not have made greater improvements in husbandry, and extended their usefulness as citizens, if they had also studied more thoroughly the English language, the mathematical sciences, geography, astronomy, chemistry, natural philosophy, and the several branches of natural history. These and many other branches of science and literature enlarge the views, strengthen the mind, and greatly multiply objects which afford pleasing reflections. They are therefore peculiarly calculated to beguile the cares, and increase the happiness, of labouring men. The mind of the naturalist, while at work in the field, is continually feasted by the operations of nature going on around him. In every cloud that passes over his head, in every fossil turned up by his plough, in every insect that crawls the earth, in every plant that vegetates or blossoms, he reads a story containing truths the most interesting, beauties that never cease to please, and sublimity that fills the mind with admiration. The mathematical sciences, natural philosophy, and chemistry, may be so applied to the art of husbandry, as to render its principles less mysterious, its operations more easy, and success more certain.

It will perhaps be objected, that such studies tend to destroy that relish for manual labour, which is essentially necessary to success in agriculture, for

“He, who by the plough would thrive,

“Himself must either hold or drive.”

If this be the case, it is owing not to the knowledge acquired, but to ambitious and erroneous notions at the same time imbibed. These notions are derived either from the injudicious complaints, so frequently uttered by farmers themselves, in presence of their children, of the hardships of their lot when contrasted with the supposed ease and rapid acquisition of riches and honours by professional and mercantile men, or from the conversation and enthusiastic expectations of those devoted to such pursuits with whom they associate at academies and other literary institutions. If, instead of such erroneous notions,

youth were more generally taught, that the cultivation of the earth is a noble employment—that the farmer's loose home-made working dress, it being particularly appropriate to his employment, is as respectable as the more costly apparel worn by those engaged in less laborious employments, and much more so than the fantastic trappings of modern dandies, whether they are seen spending their time in most fatiguing idleness, employed behind the counter, or crowding the avenues that lead to either of the learned professions; if proper pains were taken to convince them, that, although in agricultural pursuits they cannot calculate on becoming rich, industry and frugality will ensure them competence; while, of those who devote themselves to professional or mercantile employments, some may, by industry, the possession of talents peculiarly fitted for the purpose, or good fortune, become honourably and honestly wealthy; but many will either be reduced to want, or owe their prosperity to means at which the honest farmer would revolt, the arts of *quackery*, *chicanery*, or *swindling*! Then we should oftener see the scholar return to the plough, apply his science to the improvement of his favourite art, raise the reputation of agriculture, preserve the purity of his morals, and become in fine a man to whom in times of danger or distress the public might look for counsel and assistance, as to a patriot of sound judgment, without partiality, without fear, and without reproach. It is not the labours and privations of an agricultural life, that deter literary and scientific men from engaging in it; but the belief, that it would be voluntarily sacrificing all claims to distinction, and burying their talents in the shades of obscurity. For such men readily engage in military services, a seafaring life, or the most fatiguing travels, with the utmost ardour, patience, and perseverance.

The present enlightened governor of the state of New-York has hinted, in an address on this subject, the establishment of agricultural schools for the purpose of improving the art of husbandry. And, is it altogether visionary to suppose, that the best interests of this county would be promoted by the establishment of an agricultural academy, where such studies, as are best calculated to make accomplished and scientific farmers

might be advantageously pursued, and the students required by turns to labour one or two days or half days every week, with an experienced husbandman and gardener, who should be selected to manage a farm connected with the institution. Such a seminary, well endowed and properly managed, would furnish more useful instructors for town schools in agricultural districts than can now be obtained. It would answer all the purposes of a pattern-farm, rapidly disseminate knowledge of the greatest improvements in the art, and produce the most accomplished farmers and useful citizens.

Another cause of the slow progress that has been made in the art of husbandry is the small profit which farmers generally realize from their labours. This has hitherto induced many of our most enterprising citizens to seek more lucrative business, and tended to discourage those who have continued to cultivate the soil. To render agriculture, therefore, more profitable, as well as more honourable, is a primary object with agricultural societies. How can this be accomplished? By practising, among other things, on the following fundamental principles of husbandry.

1. Cultivate no more land than can be thoroughly ploughed, well manured at once, and kept free from weeds.
2. Never keep land many years under the same crops.
3. Never lay land into grass, except it be well prepared, and in a very rich condition.

Suppose for example you possess a field of arable land, containing eight acres; how can it be most advantageously managed? According to the author who lays down the foregoing rules, plough up annually, in autumn, two acres. Let it be cross ploughed, harrowed, highly manured, planted with corn or potatoes, and well tended the following spring and summer. In the spring next following, plough it twice, and sow it with grain and clover. In this way, by keeping the land in rotation, one year under Indian corn or potatoes, one year under English grain, and two years under clover, it would produce the most abundant crops, and be continually growing better, as the large tap roots of the clover especially would greatly ameliorate and enrich the soil. After going through this routine several times,

the land would be in an excellent condition to lay into grass, thus to remain till another portion of land could be treated in the same manner. Keeping in view these principles, every farmer can readily apply them to other crops, which it is therefore unnecessary to mention.

On mature reflection, I presume it must be generally admitted that one of the greatest and most frequent errors in the management of farms in Essex, is dissipating both labour and manure, by attempting to cultivate too much ground.

By improved management, the same quantity of produce as is now obtained might be raised, with the same manure, on half the land, with two thirds the labour. One half of the land and one third of the labour might therefore be devoted to other crops, the whole of which would be clear gain.

There is a specious objection to improvements in agriculture, often suggested by practical farmers, namely, "that in the same ratio that crops are increased, their value is diminished, for the market is already abundantly supplied." Admitting this to be the case, are there no other fruits, esculent vegetables, and raw materials for exportation or domestic manufacture, other than those which are now generally cultivated, which our soil and climate will produce, and towards which the attention of farmers may be profitably directed?

In taking a survey of the county of Essex, it must I think be admitted, that we are deplorably deficient in gardening, and in the cultivation of fruits which are justly ranked among the most elegant comforts of life. With very little expense of time and labour, it is in the power of every owner of a farm to surround his habitation with the most delicious fruits, to furnish a rich desert for his table at all seasons of the year, and likewise send large quantities to market. In many places considerable attention has been paid to apple trees, and some flourishing young orchards occasionally greet the eye. But we more frequently see others in a state of rapid decay. How often, even among farmers, are found families destitute of apples fit for the table, or culinary purposes, and which, when assailed by sickness, are obliged to send to some more provident neighbour for a supply! Pear trees are very generally neglected; and the greater part

of good pears sold in our markets are brought from other counties.

Our decaying FRUIT TREES demand immediate attention, for they may yet be saved. Forsyth, the distinguished manager of the Kensington gardens, in England, for whose improvements in the art of managing fruit trees the British Government paid him four thousand pounds sterling, was so successful in restoring decayed trees, that he computed "an old tree, cut down and properly medicated, would yield as much fruit the sixth year after that operation, as a young tree planted on the same soil would produce in the twentieth year from the time it was planted. He thought no tree lost beyond the power of recovery whose roots were sound, were it ever so much decayed above ground; provided there was one inch of sound bark upon it, he did not despair of recovering it. He frequently exchanged with those who were desirous of turning out old trees. If they would give him the old tree, he would take it up, and put in its place any young tree they might choose from his nursery: for he had found that, even after being transplanted, such old trees came into bearing much sooner than any young ones that he could procure. By the same rule, this experienced gardener, when he was obliged to go to a nursery, always chose the oldest plants he could find there, were they ever so stubbed or ill looking." By what mighty magic were such wonderful things accomplished? By the application of scientific principles to the improvement of his art. Following the advice of the *vine dresser* in scripture, it was his practice to *dig round them, and dung them*, and at the season when trees are growing, he cut away all the dead wood, and covered the wounds with a composition that prevented the exudation of sap, and defended them from the air, sun and rains.*

* Forsyth's composition for healing wounds in trees is made as follows :

Take lime that has been long slaked, or chalk, half a bushel; wood ashes, half a bushel; sand, two quarts; pulverize and sift them; add fresh cow-dung, one bushel; and work the whole to a fine mortar; dilute it with urine or soap-suds to the consistence of a paint, and apply it with a painter's brush; sprinkle over it a powder, composed of wood ashes, five parts, and ashes of burnt bones, one part, and press it gently with the hand.

Tar and ochre, or pulverized brick, will answer the same purpose.

In this county, peach, plum and cherry trees are much neglected; notwithstanding the latter, if headed down,* and properly managed, will soon bear abundantly; and the former are more easily cultivated than most fruit trees. The best kinds of cherries, ripening, as they do, at an early season, when there is no other kind of fruit in the market, will always command a good price. Of these, the birds, which cheer you with their melody in the spring, and greatly benefit you by destroying insects during that and the following seasons, will claim a share. Instead of declaring war against such good friends, act a more generous part; plant more trees, and raise fruit enough for them, yourselves and the market. Peach and plum trees are generally short-lived: but this is a circumstance of very little importance, as they can always be replaced if a few stones be planted annually. The better varieties of the plum and peach, which can always be raised as easily as any, are delicious fruit, and may be preserved in sugar: or, by drying, for culinary purposes; or converted into vinous liquors by fermentation.

European walnuts are deserving attention, as are our native shagbarks. The growth of the timber will pay for cultivating, and the fruit will be clear gain. The chesnut is a valuable tree, both for timber and its fruit; it grows rapidly; and a late discovery, that the wood is superior to oak bark for tanning, renders it highly important that it should be cultivated where there are such extensive tanneries as in some parts of Essex.

It has been said of American farmers, that "they plant" and "they neglect" fruit trees. In this county they seldom do the first. Nurseries are almost totally neglected, notwithstanding there ought to be one on every farm, containing at least apple, pear, plum, peach and cherry trees. At present nothing sells more readily, or affords the cultivator a better profit, than young fruit or ornamental trees, at an age suitable for transplanting; but should nurseries ever become so numerous as to do away

* *Heading down.*—This method of pruning, Forsyth says, will cause trees to bear every year, and produce three fourths more fruit than they otherwise would. When the buds begin to swell in the spring, cut the principal shoots down to three or four eyes. In old trees, cut one half of such shoots only, in one year. This prevents the growth of long, naked branches, and fills the head of the tree with bearing wood.

this inducement, young trees would still be worth their cost to plant out as opportunities should occur. A principal reason why good fruit is not more plenty, is, that few farmers think they can spare the money to purchase trees, and to raise them from the seed seems too slow a method. They seem to despair of living long enough to derive any advantage from such labours, and consequently spend a long life, destitute of many riches and comforts which they might have possessed. The best policy for agriculturalists, as well as others, is always to act on benevolent principles. Let us plant these trees, should be their language; they will benefit somebody, if we should not live to enjoy them ourselves. And, on a dying bed, it is what we have done to promote the happiness of others that will afford us the greatest consolation.

Quinces, grapes, gooseberries, currants, &c. might be easily cultivated in such quantities, as to supply our citizens with wines, preserves and sweetmeats, equally palatable, and far less injurious to health, than such as are now at a great expense imported.

In looking over English books on gardening and cookery, who is not surprised that so few of the esculent vegetables, esteemed valuable in Europe, are here cultivated? The difficulty of obtaining seed is probably the chief cause of this neglect. May we not confidently hope, that one of the benefits resulting from the establishment of this society will be the more general distribution of rare and valuable seeds; and that, by exhibiting at our annual shows the productions either of uncommon plants, or of new and better varieties of such as have hitherto been cultivated, the attention of farmers will be attracted to means of rendering the business profitable, with which they would otherwise never have become acquainted? Might not our annual meetings in the month of February be rendered more useful and interesting, if the members generally would make it an object to carry with them for distribution such seeds, roots, and also scions of the best kinds of fruits for grafting?

It would also be good policy, I conceive, for American farmers to endeavour to supply the market with such raw materials,

as our soil and climate will produce in perfection, as are in demand, either for exportation or domestic manufacture. Under this head I shall call your attention a few moments to flax, hemp and wool.

With the cultivation of FLAX, almost every farmer is in some measure acquainted. But since cotton goods have become so cheap, it has been generally abandoned as unprofitable. Great improvements in machinery for dressing and spinning it having been recently announced, it is not improbable that it will again be considered one of the most profitable of crops. Linen must ever be preferred to cotton for many uses, provided it can be afforded nearly as cheap. Expertness in manufacturing flax into useful and ornamental articles of dress was formerly, and I trust will again, be considered one of the most honourable of female accomplishments. It certainly deserves to hold a superior rank to embroidering, tambouring and painting. But to enable our ingenious and industrious ladies to rival foreigners in the manufacture of laces and fine linen, they must be furnished with the raw material in perfection. Our patriotic farmers therefore would do well to acquaint themselves with the most improved methods of cultivating and managing flax.* To the Irish, who have carried the manufacture of linen to so great a degree of perfection, we may confidently look for instruction on this subject. And as knowledge acquired from books, and other sources of like nature, is not alone sufficient to ensure success, let such methods as have been found most successful elsewhere, be subjected to experiments on a small scale here. Nor let failure in the first instance discourage farther efforts. It is the price that must generally be paid for all valuable improvements in any art.

HEMP is another article in great demand; for large quantities of it are imported, which might be cultivated here as successfully as in any country on the globe. Why then should we yield to foreign agriculturalists all the profits of supplying Amer-

* The thread for which Mrs. Crowninshield, of Danvers, received a premium from the Massachusetts society, a few years since, was made of flax sowed thick, so as to prevent it from growing rank, was pulled immediately after the blooms had fallen, and boiled instead of being rotted. Water rotting, however, would answer the same purpose.

ican shipping with the raw material for cordage and canvas? According to the Hon. Justin Ely's statement, hemp in Hampshire county has been found to produce from four to eight hundred weight to the acre, and from six to nine bushels of seed. It is worth, at this time, about nine and a half dollars per hundred, and the seed probably a dollar and fifty cents per bushel. The labour of cultivating, pulling and rotting it, cannot be more than is usually bestowed on an acre of Indian corn. An expert workman can dress 3 cwt. in a week. Should it ever be raised in large quantities, it might, undoubtedly be dressed by water, at a much cheaper rate. It must therefore I think prove a profitable crop. Were this not the case, it would notwithstanding be worthy the attention of American farmers, who ought to endeavour to supply the market with every thing which they can cultivate, without involving themselves in debt: for by so doing they will plant the seeds of resources, which some time or other will afford them a rich harvest.

WOOL. I have no wish to renew the merino speculations which proved so ruinous to many a few years since. I think however that we have much reason to regret the indiscriminate destruction of fine flocks which followed. For although I do not believe that it will ever be good policy for the farmers of this county to go largely into the raising of wool, a commodity more worthy the attention of those who inhabit the interior and more mountainous parts of our country, still I think that a few sheep may be profitably kept on almost every farm. If a farmer has plenty of wool in his house, his wife, daughters, or female domestics, will generally be disposed to manufacture it, although they would not urge him to go and buy it for this purpose, and would be seldom gratified if he did. Or he might make an exchange with the woollen manufacturer, and thus obtain his clothing easier than he otherwise would, although he might, by paying cash, get cloths at a nominally cheaper rate. What kind of sheep, generally speaking, would it be most profitable to keep for these purposes? Livingston says, half-blooded merinoes; and there is but little reason to doubt his correctness, when we take into consideration the value of the mutton as well as the fleece.

Some excellent observations on the subject of ploughing—the best method of increasing the quantity, and improving the quality, of manures—and the cultivation of root crops, and other green food, for feeding cattle—contained in the addresses of the Hon. President of this Society, render it unnecessary for me to call your attention at this time to these subjects of primary importance to every farmer.

On the subject of WHEAT, to what is said in the above mentioned addresses, I will add a few observations. Although the cultivation of this most valuable grain has been generally abandoned on account of the uncertainty of obtaining a crop, it is, I must think, still deserving attention. Is it not surprising that a plant, which comes to perfection both at the north and south of us, cannot be advantageously cultivated here? Is it not evident that the failure must be owing, not to the climate, but to some defect in the preparation, or constituent parts of the soil? If so, these defects can be remedied. Perhaps the following facts, stated by that distinguished scientific English farmer, Dr. James Anderson, will furnish all the hints necessary to ensure success. He states, “that a field of good arable land, a mellow loam, in Aberdeenshire, which had long been under culture, was subjected to a thorough summer fallow, to get rid of the weeds; and a moderate dressing of lime and some dung was given it at the same time. The whole field was sown with wheat at the proper season, which sprung up equally in every part of it. For some time no difference was perceivable in the appearance of crop over the whole. By and by it was observed that the wheat, on a small portion of the field which by accident had not had any lime put upon it, became pale and sickly: while the crop on other parts of the field advanced luxuriantly, it dwindled on this particular patch more and more until about the beginning of May: the whole had then died quite out, and not one stalk of wheat was to be found upon it, though the weeds, in consequence of the richness of the soil, grew there with extreme luxuriance. Perhaps the proportion of lime did not in this case amount to more than one thousandth part of the whole; yet the qualities of the soil were thereby totally altered, insomuch that, though before the application of that dressing the soil was inca-

pable of producing wheat at all, it was found to be at all times after that period well adapted to the rearing of this crop." The effect of wood ashes on soils, though less durable, is similar to that of lime. Will not this account for the luxuriant growth of wheat here formerly, and in those places where the wood has been recently cleared off by burning, at this time?

The greatest improvements in Agriculture in Great Britain, where plaister of Paris, as with us, is found nearly inoperative, have been made during the last forty years by the use of LIME. And there can be but little doubt that much of the soil in this county can be economically improved by the same means. A few directions therefore for using quick lime cannot fail of being interesting: for this can be more easily obtained by the farmers in this county, than any other calcareous earth, except in the neighbourhood of soap manufactories, where leached ashes, which contain much lime, can be had at a cheaper rate. The following directions for using quick lime are extracted from some of the best English writers on this subject:

From thirty to three hundred bushels are usually applied to an acre; but on poor soils, and soils which abound with roots, peat and other insoluble vegetable matter, even six hundred may be used with advantage. Soils thus dressed will be rendered more fertile forever after.

Quick lime should be reduced to powder by slacking it with water, and spread dry, so that it may mix as intimately with the soil as possible, at least one month before the seed is to be sown. In this country, it being necessary to sow grain as early as possible in the spring, the lime should be spread the preceding autumn. And as the feet of cattle are sometimes injured by it, it must be suffered to lie on the surface of the ground till it becomes mild, like chalk, which will take place in a few weeks, before it is either ploughed or harrowed in.

Quick lime applied to plants while growing, and of course to vegetating seeds, invariably injures them. Quick lime injures all animal manures, and therefore should never be mixed with common dung, or applied to the soil at the same time. When applied to low, boggy soils, in sufficient quantities, it will destroy

moss and the meadow grasses, and fit them for producing the most abundant crops of clover, and cultivated grasses.

IRRIGATION is another means of fertilizing the earth, that has not been duly appreciated in this vicinity. Falls of water have been estimated in England to be worth as much for watering the land, as for mills and factories. It is well known that even the temporary streams formed by the melting snows in the spring, if caused to run a few weeks over dry, gravelly soils, will render them highly productive of grass the whole season. Yet our brooks and rivulets are suffered not only to run to waste, but even to render barren extensive tracts of land in their vicinity. Wherever there is a fall of water running through land suitable for the purpose, let it be divided, and carried as high on each side as it will run freely ; throw the intermediate space into ridges about twenty feet wide ; along the top of each let a small stream of water be passed occasionally ; give the whole a dressing of ashes, or lime ; and it will produce the most abundant crops of grass, without any further expense. Admitting therefore that the expense of preparing land in this manner should amount, in the first instance, to an hundred or even to two hundred dollars an acre, it would still prove cheaper than most mowing land, which can be kept productive only by frequent expensive manuring. Such land would contribute the whole of its productions to enrich the other parts of the farm ; a consideration of no little importance in estimating its value.

By mixing different earths, soils may be permanently improved. Clayey and sandy lands are frequently found in the immediate vicinity of each other. By dressing the sandy with clay, and the clayey with sand, both, though naturally barren, may be rendered fertile. That similar fertility would follow the mixture of other earths cannot be doubted. Experiments made on chemical principles, will in all human probability develop most valuable resources of this kind, which are at present unknown to agriculturalists.

To the subject of fertilizing and rendering more valuable pasture lands, by covering them with TREES, I cannot too strongly urge your attention. Locust trees grow rapidly, and produce

the most valuable wood and timber. Planted on dry, sandy or gravelly pastures, they greatly fertilize the soil by their abundance of tender leaves, which, falling on the ground, rot in the course of the winter and spring. Cattle are particularly fond of the grass which grows thick and luxuriantly under them, as well as of the young trees which are continually springing up from their roots.

Similar advantages may be derived from planting low, rocky or boggy lands, which are generally covered with alders and other useless bushes, with common willows. These trees not only produce wood, which when dried is better than white pine, faster than most other trees, but greatly meliorate boggy soils, and bring in a better kind of grass, which makes excellent pasturage. Of the correctness of these assertions, every one, who will take the trouble to examine the land under groves of locust and willow trees, must, I think, be fully convinced. They are most certainly not the vain speculations of a theorist. Like many other facts contained in this address, they are derived not from books, but from the observation and experience of my worthy father, who spent an industrious, useful and observing life in the practice of husbandry. Nor are the above mentioned the only advantages derived from covering pasture lands with trees. They serve to shelter the cattle, while feeding, from the exhausting effects of a burning sun. They prevent rapid evaporation, and probably attract showers; consequently increase the size of adjacent streams, and thereby fertilize soils far beyond the reach of their shadows. Besides, whatever grows out of the earth ultimately returns to it again, to afford food for other plants which succeed. Consequently the more any soil can be made to produce, the more that, or some other in the neighbourhood, will be enriched. Do any doubt the correctness of these theories? Why has Palestine, or the holy land, which once flowed with milk and honey, and supported by its own produce, on an extent of territory not exceeding that of Massachusetts, seven millions of people, become so barren as scarcely to be able to preserve a few thousand miserable wretches? Why has the river Jordan, once undoubtedly a noble stream rolling through fertile valleys, been reduced to a small

brook winding its way through a sandy desert? You will perhaps answer, the malediction of the Most High rests upon it. True, but the Almighty effects his purposes through the agency of natural causes. It was overrun by victorious armies, and vegetation was destroyed; exposed to the direct rays of the sun, the soil itself disappeared, the springs were dried up, and fertilizing showers became less and less frequent. The same process is now going on in our naked pastures; many of which, that a few years since were well clothed with grass, now produce little or nothing but moss.

Improving the breeds and condition of **LIVE STOCK** must also increase the profits of Agriculture. One good cow full fed is worth more for the dairy than four ordinary half-starved ones.* Would it not therefore be for the interest of every farmer to keep no more neat cattle than can be well pastured or soiled in the summer, and fed on English hay, corn fodder, potatoes, turnips, carrots, beets, &c. in the winter, throwing the coarser kinds of hay and straw under them to furnish a warm bed, and to be converted into manure at the same time? By so doing, and by crossing inferior breeds, and raising the best calves, it is in the power of almost every farmer in the course of a few years, without involving himself in debt, greatly to improve his stock, and increase the income of his dairy. I know that this high feeding of milch cows is not generally believed to be profitable, notwithstanding Mr. Oakes and others have proved so satisfactorily that one bushel of Indian corn per week will cause a good cow to yield from seven to ten additional pounds of butter. Allowing the corn to be worth $62\frac{1}{2}$ cents, the extra butter, at $12\frac{1}{2}$ cents per pound, would pay all the additional labour, and afford a good profit (on the corn) besides. But this is not all: the cow would give milk nearly the whole year, be made good beef at the same time, and her calves would be much more valuable. Indian corn, however, is probably not the cheapest article to feed cattle

* If cows are ever allowed to fall very low during the winter, in vain shall you hope to obtain an abundant supply of milk by bringing them into high condition in the summer; for if a cow be lean at the time of calving, no management afterwards will ever bring her to yield for that season any thing like the quantity of milk that she would have done, had she been all the winter in a high condition.

Anderson.

upon : potatoes, turnips, beets, carrots, pumpkins, &c. are much more easily raised, and will probably answer the same purpose.

Farmers generally would make their pursuits more profitable if they were careful to send to market the best articles, in the neatest order. Good butter, good cheese, good fruit, good cider, good pork, beef and mutton, will always sell, even when the market is glutted with inferior kinds of the same articles. The difference of the expense of raising or preparing the best, and the more ordinary kinds of these commodities, is often very trifling. The butter, for example, offered for sale, is often bad, rancid, and almost worthless. Yet such butter costs almost as much, perhaps often more, than it would to have made it of the best quality. Butter should always be made, salted and preserved by rule. Despise not, therefore, directions on this subject found in books ; for it is impossible always to make good butter, if it be carelessly worked over, and salted as chance directs. The difficulty of making good butter, and of sending it uninjured to the market, in the hottest weather, may be easily obviated. For, with very little trouble or expense, ice may be kept in a common cellar the whole season.*

In discussing the means of rendering the pursuit of Agriculture more profitable, DOMESTIC ECONOMY is too important to be omitted. I am well aware that it is extremely difficult to speak

* In the middle or one corner of the cellar may be built a bin. Throw down some boards, and cover the bottom with straw ; or, what is better, the spent bark of tanneries, generally known by the name of tan, in sufficient quantity to leave it a foot in thickness under the necessary pressure. In the month of February or March, go to the most convenient pond of fresh water, and obtain a sufficient quantity of ice, cutting or sawing it up in blocks as large as can be conveniently handled, and pile it up as compactly as possible in the middle of the bin, leaving a space of one foot or more all around it ; fill this space, and cover the whole with tan or straw, and the ice, unless the cellar be uncommonly open, will keep the whole summer. Two men, and one pair of oxen, will perform all the labour necessary to lay in such a store of ice in one day. Around this ice let the pans of milk be set, and place the pots of cream and butter upon it. Place two or three pounds of ice in each box, and if conveyed thither as expeditiously as from any part of the county of Essex it may be done, it will reach the market in the finest order.

Butter not wanted for immediate use is well preserved as follows :—Take two parts of the best common salt, one part of sugar, and one of saltpetre ; beat them up together, and blend the whole completely. Take one ounce of this composition for every pound of butter, work it well into the mass, and close it up for use.

on this subject, without being misunderstood, and giving offence. Those who cultivate the soil deserve to live on its best productions. It is my most sincere desire, that farmers should live well. But the phrase, *live well*, is to be understood living in such a manner as will most promote their happiness, by preserving the health of the body, and tranquillity of the mind; and not living in habits of luxury and intemperance, the most expeditious means of destroying both. I know that it requires greater fortitude than many possess to oppose the fashions of the times, and to change established habits. I also well know that a man cannot always do as he could wish, because his views may not coincide with other members of his family. Still in all cases something may be done towards retrenching expenses that consume the whole of a farmer's income. So long as those engaged in husbandry purchase from other nations a large portion of their daily food and clothing, so long they will be obliged to labour hard, and submit to many real privations, to enable them to defray their current family expenses. It therefore becomes an object of serious concern to them, to learn some way of more cheaply supplying the wants, without diminishing the comforts, of life. Let those who feel interested in this subject review a list of their expenditures in times past, and they will probably be able to discover the means of saving much in future. One exhausting drain on the resources of many farmers is the use of ardent spirits, as a common drink. This not unfrequently consumes their health, cash, and respectability. If therefore the use of strong drinks must be continued, let such as every farmer can prepare for himself be substituted for distilled spirits. Cider, wine, and strong beer, well made and carefully preserved, will surely answer every purpose to which spirituous liquors can be usefully applied. The art of making these ought therefore to be studied by every person desirous of preserving the health of his family, or of husbanding his resources to the best advantage. The most successful practices in this art, time will not permit me to detail. Let the following hints suffice.

By selecting good, sound apples, and properly managing the liquor during and after fermentation, CIDER can be made without addition, possessing a fine flavour, and in strength equal to about one fourth its quantity of proof spirit. By the addition of



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about twenty pounds of sugar to a barrel of common cider; as it comes from the press, it will fine itself, keep for years, even on the lees, without souring, and be much improved in strength.

WINE, far superior to most that is imported, either for use in sickness or health, may be made from currants, ripe or unripe grapes, cranberries, or other subacid fruits, allowing about a bushel and a half of fruit, and seventy-five pounds of sugar, to the barrel. Good wines made in this manner will cost about fifty cents per gallon. They now readily sell for a dollar. A respectable member of this society, Mr. Caleb Smith, of Danvers, shipped some currant wine of his own making to India, a few years since, and there obtained for it over two dollars a gallon. This wine was made, and kept perfectly well on this long voyage, without the addition of brandy, or other spirit, a circumstance which greatly increases the value of the experiment, and certainly entitles Mr. Smith to the thanks of the community.

Four bushels of barley malted, and a pound of hops, will make a barrel of strong and a barrel of TABLE BEER. These liquors should be made in the winter, and will be found excellent drinks in the following summer, free from all the objections which many have to new beer and cider at that season. All the materials, for composing this best of strong drinks for labouring men, can be easily raised, and all the work, except malting the barley, which will cost about twenty cents a bushel, can be performed, at a leisure season, by the farmers themselves.

AGRICULTURALISTS OF ESSEX! You possess a territory in which are found a great variety of soils; and the means of rendering them fertile are every where abundant. Three fourths of your borders are washed by the waters of the ocean, which are continually throwing on your shores materials for excellent manure, and which afford, without the expense of making canals, all the facilities of a conveyance by water for your surplus produce to all the most important markets on the globe. The same conveyance will bring lime from distant quarries, if it cannot be found at home, at a small advance on its prime cost, to within a few miles of your doors. What then is there to prevent this county from becoming one of the most fertile and productive districts in New-England? Industry is not wanting, and luxury has not

made greater inroads among us than it has in most other places in our favoured land. A more general diffusion of the knowledge acquired by the experience of individuals, a scientific acquaintance with the principles of the art, more enterprise, generous emulation, and noble ambition, among farmers themselves, are what seem to be most necessary to carry the art of husbandry here to a high degree of perfection. These benefits we trust will result from the institution of this society:—An institution, in the success of which, every owner of land ought to feel particularly interested. Eight or nine hundred dollars more are wanted to enable the society to obtain the whole of the bounty so generously proffered by the government of the state. Are there not many present who are willing to contribute to this object three dollars each, and become members of this society for life? Having done this, another important duty remains to be performed; that is, to exert all your powers to render the society respectable, and extend its influence as widely as possible. To do this, it is desirable that every member should make some communication of his success, or exhibit something worthy of notice, on every occasion like the present. Another important duty is, to prevent our annual cattle shows from becoming scenes of riot, drunkenness, gambling, cheating, and dissipation. Let the “Farmer’s Jubilee” be sacred to sober joys, and temperate festivity, throughout the county; but let every good citizen discountenance every thing of a contrary tendency. Then indeed will the farmers of Essex, in unison with every benevolent mind, have reason to bless the institution, and venerate the founders, and all who shall distinguish themselves as members, of the Essex Agricultural Society, to the latest generation.

ERRATA.

Page 21, eighth line from bottom, for October, 1820, read October, 1821.

Page 29, in some of the copies, for D. Cummins, Secretary, Dec. 7, 1819, read F. Howes, Secretary, Jan. 10, 1821.

Page 47, ninth line from bottom, for gratified if he did, read gratified if they did.